

AIR EMISSION PERMIT NO. 06700061-004

Major Amendment

IS ISSUED TO

Bushmills Ethanol

BUSHMILLS ETHANOL

17025 Highway 12 Northeast
Atwater, Kandiyohi County, MN 56209

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are as described in the Permit Applications Table.

This permit amendment supersedes Air Emission Permit No. 06700061-003 and authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the State Implementation Plan under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency (EPA) Administrator or citizens under the Clean Air Act.

Permit Type: State; Limits to Avoid Pt 70/Limits to Avoid NSR

Issue Date: May 4, 2010

Expiration Date: Permit does not expire; All Title I conditions do not expire

A handwritten signature in black ink, appearing to read "Don Smith", written over a horizontal line.

Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for Paul Eger
Commissioner
Minnesota Pollution Control Agency

PERMIT APPLICATIONS TABLE

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	03/15/2004	001
Administrative Amendment	Not Applicable	002
Major Amendment	08/03/2006	003
Major Amendment	01/18/08	004
Minor Amendment	01/29/09	004
Major Amendment	10/08/09	004

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Amendment Description

Table A: Limits and Other Requirements

Table B: Submittals

Table C: Not used in this permit

Appendix I – Insignificant Activities List

Appendix II – Dispersion Modeling Inputs and AERA Chemicals List

Appendix III – Odor Action Plan

Appendix IV – Fugitive Dust Control Plan

NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

Bushmills Ethanol (Bushmills) is a fuel-grade ethanol production plant located west of Atwater, Minnesota at the intersection of U.S. Highway 12 and Minnesota Highway 123. The plant also produces distillers dried grains and solubles and wet cake for animal feed as a co-product of the ethanol production process. Emission sources at the facility include grain handling and processing units, fermentation tanks, boilers, liquid storage tanks, valves and other process equipment, ethanol loadout, and vehicular road traffic. The Bushmills facility is currently limited to a maximum of 65 million gallons denatured ethanol production annually.

AMENDMENT DESCRIPTION:

This major permit amendment (Air Emission Permit No. 06700061-004) incorporates proposed changes described in three separate permit applications. The first group of changes are associated with a major amendment application in which Bushmills proposed modifying required pressure drop operating ranges for three baghouse control devices. The second group of changes are associated with a minor amendment application in which Bushmills proposed adding additional ethanol truck loadout capacity and replacing an existing loadout flare with another flare. The third group of changes are associated with a major amendment application in which Bushmills proposed adding a second set of molecular sieves to the distillation process for redundancy, removing dryer operating and monitoring requirements for temperature, process throughput, beer feed rate, and syrup feed rate, and changing the required operating parameter ranges for baghouse and fermentation scrubber control devices.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name Bushmills Ethanol
 Permit Number 06700061 - 004

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
SOURCE-SPECIFIC REQUIREMENTS	hdr
Comply with Fugitive Emission Control Plan. The Permittee shall follow the actions and recordkeeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Follow the Odor Action Plan which is attached to this permit.	Minn. R. 7007.0800, subp. 2
OPERATIONAL LIMITS	hdr
Production: less than or equal to 65.0 million gallons/year using 12-month Rolling Sum of denatured ethanol. By the 15th day of each month, calculate a new rolling sum for the previous 12 months.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
Process Throughput: less than or equal to 700,000 tons/year using 12-month Rolling Sum of grain assuming 56 pounds per bushel of grain. By the 15th day of each month, calculate a new rolling sum for the previous 12 months.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
Process Throughput: less than or equal to 200,000 tons/year using 12-month Rolling Sum of distillers dry grains (DDGS). By the 15th day of each month, calculate a new rolling sum for the previous 12 months.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
FUEL USE RESTRICTIONS	hdr
Fuel Use: Fuel used in all production units is limited to natural gas, except for Dryer A (EU 001) which is authorized to use biogas from the Methanators (EU 049 and EU 050).	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
PARAMETERS USED IN MODELING	hdr
Parameters Used in Modeling: The parameters used in the modeling performed for an Environmental Assessment Worksheet under Minn. R. ch. 4410 for this facility are listed in Appendix II of this permit. If the Permittee intends to change any of these parameters, the Permittee must submit the revised parameters to the Commissioner and receive written approval before making any changes. The revised parameter information submittal must include, but is not limited to, the locations, heights and diameters of the stacks; locations and dimensions of nearby buildings; velocity and temperatures of the gases emitted; and the emission rates. The plume dispersion characteristics due to the parameter revisions must equal or exceed the dispersion characteristics modeled for this permit, and the Permittee shall demonstrate this in the proposal.	Minn. Stat. Section 116.07, subs. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subs. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
Parameters Used in Modeling (continued): If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.	Minn. Stat. Section 116.07, subs. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subs. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
Parameters Used in Modeling (continued): Pollutant Emission Rates: If the Permittee proposes to emit any pollutant in addition to those listed in Appendix II of this permit, or proposes to increase the emission rate of any pollutant listed in Appendix II, the Permittee shall first use the Bushmills Ethanol Air Emissions Risk Analysis (AERA) report as a template for recalculating the risk due to the change in emissions. The Permittee shall submit a report to the MPCA of the proposed change and demonstrate that the recalculated risk for all pollutants emitted from the facility does not exceed the acceptable risk criteria used in the Bushmills Ethanol AERA report. The Permittee must receive written approval from the MPCA before making any changes.	Minn. Stat. Section 116.07, subs. 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subs. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name Bushmills Ethanol

Permit Number 06700061 - 004

<p>Parameters Used in Modeling (continued):</p> <p>For changes that do not involve an increase in an emission rate and that do not require a permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before making the change to any parameter</p>	<p>Minn. Stat. Section 116.07, subds 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps 1, 2 & 4; Minn. R. 7009.0010-7009.0080</p>
<p>Parameters Used in Modeling (continued):</p> <p>For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before making the change to any parameter.</p> <p>For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted prior to or with the permit amendment application</p> <p>This is a state only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act</p>	<p>Minn. Stat. Section 116.07, subds 4a & 9; Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M); Minn. R. 7007.0800, subps 1, 2 & 4; Minn. R. 7009.0010-7009.0080</p>
<p>OPERATIONAL REQUIREMENTS</p>	<p>hdr</p>
<p>Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.</p>	<p>Minn. R. 7011.0020</p>
<p>Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A</p>	<p>Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)</p>
<p>Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment, and the records kept to demonstrate plan implementation.</p>	<p>Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)</p>
<p>Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.</p>	<p>Minn. R. 7019.1000, subp. 4</p>
<p>Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.</p>	<p>Minn. R. 7011.0150</p>
<p>Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act</p>	<p>Minn. R. 7030.0010 - 7030.0080</p>
<p>Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A)</p>	<p>Minn. R. 7007.0800, subp. 9(A)</p>
<p>The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16</p>	<p>Minn. R. 7007.0800, subp. 16</p>
<p>PERFORMANCE TESTING</p>	<p>hdr</p>
<p>Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B</p>	<p>Minn. R. ch. 7017</p>
<p>Performance Test Notifications and Submittals</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test</p> <p>Performance Test Plan: due 30 days before each Performance Test</p> <p>Performance Test Pre-test Meeting: due 7 days before each Performance Test</p> <p>Performance Test Report: due 45 days after each Performance Test</p> <p>Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018</p>	<p>Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name Bushmills Ethanol
 Permit Number 06700061 - 004

Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit)	Minn. R. 7007.0800, subp 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A and/or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp 4(D)
RECORDKEEPING	hdr
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp 5(A).	Minn. R. 7007.0800, subp 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp 5(B)
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the Permittee does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp 3. At the time of notification, the Permittee shall inform the Commissioner of the cause of the shutdown and the estimated duration. The Permittee shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp 2. At the time of notification or as soon as possible thereafter, the Permittee shall inform the Commissioner of the cause of the breakdown and the estimated duration. The Permittee shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

<p>Fugitive Emissions Control Plan: The Permittee shall submit a fugitive emissions control plan within 60 days of the date of permit issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and recordkeeping. The Permittee shall follow the actions and recordkeeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the permittee is out of compliance with Minn. R. 7011.0150 or the fugitive emission control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors.</p>	<p>Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2</p>
<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>	<p>Minn. R. 7007.1150 through Minn. R. 7007.1500</p>
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	<p>Minn. R. 7007.1400, subp. 1(H)</p>
<p>Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.</p>	<p>Minn. R. 7019.3000 through Minn. R. 7019.3100</p>
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	<p>Minn. R. 7002.0005 through Minn. R. 7002.0095</p>
<p>Diesel Engine Idling Minimization: Not later than 60 days after issuance of Permit Action 004, the Permittee shall submit a plan to minimize idling of motor vehicle diesel engines on the plant site. The Permittee shall implement the plan upon submittal to the Agency. The Agency may request additional measures or modification of the plan after review.</p>	<p>Minn. R. ch. 7009; Minn. R. 7011.0150; Minn. R. 7007.0800, subp. 2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

- Subject Item: GP 001 Dry Bulk Commodity Facility
- Associated Items:
- EU 005 Truck Receiving 1
 - EU 006 Truck Receiving 2 & Rail Receiving
 - EU 007 Conveyor
 - EU 008 Grain Elevator 1
 - EU 009 Grain Bin 1
 - EU 010 Grain Bin 2
 - EU 011 Grain Bin 3
 - EU 012 Grain Bin 4
 - EU 013 Emptying Conveyor
 - EU 014 Grain Elevator 2
 - EU 015 Grain Day Bin
 - EU 016 Hammermill Feed Conveyor
 - EU 017 Hammermill 1
 - EU 018 Hammermill 2

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 5.0 percent opacity	Minn. R. 7011.1005 subp. 3(A)
OPERATIONAL LIMITS	hdr
Process Throughput: less than or equal to 700,000 tons/year using 12-month Rolling Sum of grain assuming 56 pounds per bushel of grain.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all captured emissions through a baghouse. See Group 2 and Group 3 (GP 002 and GP 003) for requirements for baghouse operation and maintenance. The control equipment shall be operated according to the procedures in the Operation and Maintenance Plan.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions, maintain air pollution control equipment in proper operating conditions and utilize the air pollution control systems as designed	Minn. R. 7011.1005, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: GP 002 Dry Bulk Commodity Control Equipment Vents

Associated Items: SV 002 Grain Unloading Baghouse

SV 003 Hammermilling Baghouse

SV 007 DDGS Cooling Cyclone/Baghouse

SV 010 DDGS Loadout Baghouse

What to do	Why to do it
LIMITS	hdr
Particulate Matter < 10 micron less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Opacity less than or equal to 10 percent opacity	Minn. R. 7011.1005 subp. 3(D)
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Testing: Conduct performance testing for PM/PM10 emissions according to the testing frequency described in the MPCA approved Testing Frequency Plan until a new testing frequency is approved by MPCA.	Title I Condition To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
VISIBLE EMISSIONS	hdr
Visible Emissions: The Permittee shall check the fabric filter stacks for any visible emissions once each day of operation during daylight hours, or the pressure drop across the fabric filter once each day of operation if inclement weather prohibits a visible emissions check.	Title I Condition To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Recordkeeping of Visible Emissions and Pressure Drop: The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit.	Title I Condition To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Corrective Action: If visible emissions are observed, the Permittee shall follow the Operation and Maintenance Plan for the fabric filter and take corrective actions as soon as possible to eliminate the visible emissions and/or return the pressure drop to within the permitted range. The Permittee shall keep a record of the type and date of all corrective actions taken.	Title I Condition To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

Subject Item: GP 003 Baghouses
 Associated Items: CE 002 Unloading/Loading Baghouse
 CE 003 Milling Baghouse
 CE 007 DDGS Baghouse
 CE 009 DDGS Loadout Baghouse

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall capture efficiency for Particulate Matter < 10 micron: greater than or equal to 99 percent capture efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the control equipment such that it achieves an overall capture efficiency for Total Particulate Matter: greater than or equal to 99 percent capture efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Pressure Drop: greater than or equal to 0 inches of water column and less than or equal to 6 inches of water column	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain each fabric filter according to the procedures in the Operation and Maintenance Plan.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Visible Emissions: The Permittee shall check the fabric filter stacks for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Recordkeeping of Visible Emissions and Pressure Drop: The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was within the range specified in this permit.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: GP 004 Fermentation Units Venting to Fermentation Scrubber CE 004

Associated Items: CE 004 Fermentation Scrubber

EU 019 Fermenter 1

EU 020 Fermenter 2

EU 021 Fermenter 3

EU 022 Beerwell

EU 063 Fermenter 4

SV 004 Fermentation Scrubber

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to the Fermentation Scrubber (CE004). See Fermentation Scrubber (CE004) for operation and maintenance requirements for the scrubber.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
OPERATIONAL LIMITS	hdr
Total Fermentation Tank Volume: Limited to 2,920,000 gallons.	Minn. R. 4410

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

Subject Item: GP 005 Distillation and Units Venting to the Thermal Oxidizer

- Associated Items:** CE 001 Thermal Oxidizer/Heat Recover
 EU 023 Mixer
 EU 024 Slurry Tank 1
 EU 025 Slurry Tank 2
 EU 026 Cook Tube
 EU 029 Liquifaction Tank 1
 EU 030 Liquifaction Tank 2
 EU 031 Yeast Tank
 EU 032 Beer Column
 EU 033 Side Stripper
 EU 034 Rectifier Column
 EU 035 190 Proof Condenser
 EU 036 Molecular Sieve (A)
 EU 037 200 Proof Condenser
 EU 038 Centrifuge 1
 EU 039 Centrifuge 2
 EU 040 Centrifuge 3
 EU 041 Evaporators 1
 EU 042 Evaporators 2
 EU 043 Evaporators 3
 EU 044 Evaporators 4
 EU 045 Evaporators 5
 EU 046 Evaporators 6
 EU 047 Evaporators 7
 EU 048 Evaporators 8
 EU 049 Methanator 1
 EU 050 Methanator 2
 EU 066 Molecular Sieve (B)
 SV 001 Thermal Oxidizer HRSG Stack
 TK 007 Centrate Tank

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to the Thermal Oxidizer (CE001) See Thermal Oxidizer (CE001) for operation and maintenance requirements for the Thermal Oxidizer.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-10 05/03/10

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: GP 006 Dryers

Associated Items: EU 001 Dryer A

EU 002 Dryer B

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity	Minn. R. 7011.0610, subp. 1(A)(2)
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions to a thermal oxidizer (CE001). See CE 001 for emission limits, testing requirements and operation and maintenance requirements for the thermal oxidizer.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
The Permittee shall operate and maintain each dryer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800 subp. 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

Subject Item: GP 007 Tanks
 Associated Items: TK 001 190 Proof Ethanol
 TK 002 200 Proof Ethanol
 TK 004 Denatured Ethanol #1
 TK 005 Denatured Ethanol #2
 TK 006 Natural Gasoline

What to do	Why to do it
POLLUTION CONTROL REQUIREMENTS	hdr
The storage vessels shall be equipped with a fixed roof in combination with an internal floating roof meeting the requirements of 40 CFR Section 60.112b(a)(1)	40 CFR Section 60.112b(a); Minn. R. 7011.1520(C)
Internal Floating Roof Seal Requirement: Each internal roof shall be equipped with one of the closure devices between the wall of the storage vessel and the edge of the internal floating roof as described in Section 60.112b(a)(1)(ii).	40 CFR Section 60.112b(a)(1)(ii); Minn. R. 7011.1520(C)
MONITORING REQUIREMENTS	hdr
Inspection - Prior to initial fill of tanks: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with Volatile Organic Liquid (VOL). If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric; or defects in the internal floating roof or both, the Permittee shall repair the items before filling the storage vessel.	40 CFR Section 60.113b(a)(1); Minn. R. 7011.1520(C)
Inspection - Annual: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every twelve (12) months after initial fill as required by Section 60.113b(a)(2).	40 CFR Section 60.113b(a)(2) and (4); Minn. R. 7011.1520(C)
Inspection - Tank Empty and Degassed: Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the tank is emptied and degassed as required by Section 60.113b(a)(4). In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years.	40 CFR Section 60.113b(a)(2) and (4); Minn. R. 7011.1520(C)
RECORDKEEPING REQUIREMENTS	hdr
Keep a record of each inspection performed as required by 40 CFR Section 60.113b(a). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings.)	40 CFR Section 60.115b(a)(2); Minn. R. 7011.1520(C)
Recordkeeping: Maintain records showing the dimensions of each tank and an analysis showing tank capacity.	40 CFR Section 60.116b(c); Minn. R. 7011.1520(C)
Recordkeeping: Maintain records of the volatile organic liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period, calculated as described in 40 CFR Section 60.116b(e).	40 CFR Section 60.116b(c); Minn. R. 7011.1520(C)
REPORTING REQUIREMENTS	hdr
Notification: Notify the Commissioner in writing at least 30 days prior to the filling or refilling of each tank for which an inspection is required by 40 CFR Section 60.113b(a)(1) and (a)(4) to afford the Commissioner the opportunity to have an observer present. If the inspection required by 40 CFR 6.113b(a)(4) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the Administrator at least 7 days prior to the refilling of the tank. Notification shall be made by telephone followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Commissioner at least 7 days prior to the refilling.	40 CFR Section 60.113b(a)(5); Minn. R. 7011.1520(C)
After each inspection required by 40 CFR Section 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof or other control equipment defects listed in 40 CFR Section 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within thirty (30) days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR Section 60.112b(a)(1) or 40 CFR Section 60.113b(a)(3)(ii) and list each repair made.	40 CFR Section 60.115b(a)(4); Minn. R. 7011.1520(C)

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-12 05/03/10

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

<p>Reporting - Annual Inspection Results: If any of the conditions described in 40 CFR Section 60.113b(a)(2) are detected during the annual visual inspection required by 40 CFR Section 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the tank, the nature of the defects, and the date the tank was emptied or the nature of and date the repair was made</p>	<p>40 CFR Section 60.115b(a)(3), Minn. R. 7011.1520(C)</p>
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TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

Subject Item: GP 008 Grain Receiving and DDGS Loadout
Associated Items: CE 002 Unloading/Loading Baghouse
 CE 007 DDGS Baghouse
 EU 005 Truck Receiving 1
 EU 006 Truck Receiving 2 & Rail Receiving
 EU 058 DDG Loadout

What to do	Why to do it
If visible dust emissions are observed exiting the loadout area, the Permittee shall keep all doors in the grain receiving area and DDGS loadout area closed while receiving grain or loading out DDGS	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Vent all captured emissions from the grain receiving area to the Unloading/Loading Baghouse CE 002 and all emissions from the DDGS Loadout Area to the DDGS Baghouse CE 007.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

Subject Item: GP 009 Hammermills
 Associated Items: CE 003 Milling Baghouse
 EU 016 Hammermill Feed Conveyor
 EU 017 Hammermill 1
 EU 018 Hammermill 2
 SV 003 Hammermilling Baghouse

What to do	Why to do it
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Opacity: less than or equal to 5.0 percent opacity	Minn. R. 7011.1005, subp. 3(A)
Periodic monitoring requirements for baghouses can be found under GP 003 Baghouses.	Minn. R. 7007.0800, subp. 4 B.
OPERATIONAL LIMITS	hdr
Process Throughput: less than or equal to 700,000 tons/year using 12-month Rolling Sum of grain assuming 56 pounds per bushel of grain.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
POLLUTION CONTROL REQUIREMENTS	hdr
Vent all emissions through a baghouse when grain is being ground. See GP 003 for requirements for baghouse operation and maintenance.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name Bushmills Ethanol
 Permit Number 06700061 - 004

- Subject Item:** GP 010 Flaring
Associated Items: CE 006 Flaring
 CE 010 Flaring
 EU 051 Methanator Flare
 EU 065 Loadout Flare
 SV 006 Methanator Flare
 SV 011 Loadout Flare

What to do	Why to do it
EMISSION LIMITS	hdr
Flares must be designed for and operated with no visible emissions except for a period not to exceed a total of 5 minutes during any 2 consecutive hours	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J); Minn. R. 7007.0800, subp. 2
Visible Emissions: The Permittee shall check the product loadout flare (EU 065) and methanator flare (EU 051) for any visible emissions once each day of operation during daylight hours while each flare is operating. Record the results of each visible emissions check and maintain records at the facility.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J); Minn. R. 7007.0800, subps 4 and 5
OPERATING REQUIREMENTS	hdr
Records Requirement: Keep a record of any startup, shutdown, or malfunction in the affected facility or malfunction of the air pollution control equipment.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Recordkeeping: Maintain a file of all measurements, CMS performance evaluations, calibration checks, adjustments and maintenance, and all other information required by this part in permanent form, suitable for inspection for at least two years following the date of such measurements, maintenance, and records.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operation Requirement: At all times, including periods of startup, shutdown, and malfunction, owners shall maintain and operate any affected facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operating Requirement: Flares shall be operated with a flame present at all times	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operating Requirement: Flares must be used only if the combustion gas has a heating value of 300 Btu/scf or greater.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Construction and Operation Requirement: Steam assisted flares designed and operated with an exit velocity less than Vmax (as determined by the method specified in 40 CFR 60.18(f)(5)) and less than 400 ft/sec are allowed.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Construction Requirement: Flares used to comply with this section shall be steam assisted, air assisted, or nonassisted.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operation Requirement: Flares shall be monitored to ensure that they are operated and maintained in conformance with their design, and according to the procedures in the Operation and Maintenance Plan.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operation Requirement: Flares shall be operated at all times when emissions may be vented to them.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Compliance Requirement: Reference Method 22 shall be used to determine the compliance of flares with the visible emissions provisions of this subpart.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Operation Requirement: Flame presence shall be monitored using a thermocouple or any other equivalent device.	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: GP 012 Ethanol Loadout

Associated Items: EU 053 Fuel Loadout Truck

EU 055 Fuel Loadout Rail

What to do	Why to do it
Vent all emissions when loading ethanol into trucks to a flare. See GP 010 for requirements for the flare.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
All rail cars must be dedicated fleet (carry only ethanol). No loadout controls are required for the dedicated fleet rail cars. To be considered dedicated, the rail cars must be placarded as ethanol transportation cars	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: GP 013 Methanators

Associated Items: EU 049 Methanator 1

EU 050 Methanator 2

What to do	Why to do it
Vent all emissions to the flare or to Dryer A (EU 001) See CE 001 and GP 010 for requirements for the control equipment.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: SV 002 Grain Unloading Baghouse

- Associated Items:** EU 005 Truck Receiving 1
 EU 006 Truck Receiving 2 & Rail Receiving
 EU 007 Conveyor
 EU 008 Grain Elevator 1
 EU 009 Grain Bin 1
 EU 010 Grain Bin 2
 EU 011 Grain Bin 3
 EU 012 Grain Bin 4
 EU 013 Emptying Conveyor
 EU 014 Grain Elevator 2
 EU 015 Grain Day Bin
 EU 062 Grain Bin 5
 EU 064 Grain Bin 6
 GP 002 Dry Bulk Commodity Control Equipment Vents

What to do	Why to do it
Performance Test: due before end of each 60 months starting 05/24/2006 for PM emissions	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due before end of each 60 months starting 05/24/2006 for PM10 emissions.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: SV 003 Hammermilling Baghouse

Associated Items: EU 016 Hammermill Feed Conveyor

EU 017 Hammermill 1

EU 018 Hammermill 2

GP 002 Dry Bulk Commodity Control Equipment Vents

GP 009 Hammermills

What to do	Why to do it
Performance Test: due before end of each 60 months starting 05/25/2006 for PM emissions	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due before end of each 60 months starting 05/25/2006 for PM10 emissions	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol
 Permit Number: 06700061 - 004

Subject Item: SV 007 DDGS Cooling Cyclone/Baghouse
Associated Items: EU 052 Cooling Cyclone (Type II)
 GP 002 Dry Bulk Commodity Control Equipment Vents

What to do	Why to do it
Performance Test: due before end of each 60 months starting 05/24/2006 for PM emissions.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
Performance Test: due before end of each 60 months starting 05/24/2006 for PM10 emissions.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: SV 010 DDGS Loadout Baghouse

Associated Items: GP 002 Dry Bulk Commodity Control Equipment Vents

What to do	Why to do it
Performance Test: due before end of each 60 months starting 05/23/2006 for PM emissions	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due before end of each 60 months starting 05/23/2006 for PM10 emissions	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: EU 060 190hp IC Engine

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 20.0 percent opacity once operating temperatures have been attained	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
OPERATING REQUIREMENTS	hdr
Operating Hours: less than or equal to 60 hours/year using 12-month Rolling Sum for the generator for routine testing and maintenance. The sum is to be calculated by the 15th day of each month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Operating Hours: less than or equal to 440 hours/year using 12-month Rolling Sum for hours qualifying as emergency use under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995; to be calculated by the 15th day of each month.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
RECORDKEEPING	hdr
Hours of Operation: The Permittee shall record each day of operation, the number of hours of operation of the generator and a monthly record of 12-month rolling sum of hours of operation	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency diesel generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year.	Minn. R. 7007.0800, subp. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: EU 061 Wet Cake Storage and Loadout

What to do	Why to do it
Volatile Organic Compounds, less than or equal to 12.1 tons/year using 12-month Rolling Sum. By the 15th day of each month, calculate and record a new rolling sum for the previous 12 months.	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee may produce wetcake as part of its normal operations.	Minn. R. 7007.0800, subp. 2
When wetcake by-product is produced, it will be stored for no more than 72 hours on-site.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: CE 001 Thermal Oxidizer/Heat Recover

- Associated Items:**
- EU 001 Dryer A
 - EU 002 Dryer B
 - EU 003 Thermal Oxidizer
 - EU 004 Process/Distillation Vents
 - EU 023 Mixer
 - EU 024 Slurry Tank 1
 - EU 025 Slurry Tank 2
 - EU 026 Cook Tube
 - EU 027 Flash Tank
 - EU 028 Receiver Tank
 - EU 029 Liquifaction Tank 1
 - EU 030 Liquifaction Tank 2
 - EU 031 Yeast Tank
 - EU 032 Beer Column
 - EU 033 Side Stripper
 - EU 034 Rectifier Column
 - EU 035 190 Proof Condenser
 - EU 036 Molecular Sieve (A)
 - EU 037 200 Proof Condenser
 - EU 038 Centrifuge 1
 - EU 039 Centrifuge 2
 - EU 040 Centrifuge 3
 - EU 041 Evaporators 1
 - EU 042 Evaporators 2
 - EU 043 Evaporators 3
 - EU 044 Evaporators 4
 - EU 045 Evaporators 5
 - EU 046 Evaporators 6
 - EU 047 Evaporators 7
 - EU 048 Evaporators 8
 - EU 049 Methanator 1
 - EU 050 Methanator 2
 - EU 066 Molecular Sieve (B)
 - GP 005 Distillation and Units Venting to the Thermal Oxidizer

What to do	Why to do it
EMISSIONS LIMITS	hdr
Nitrogen Oxides: less than or equal to 0.10 lbs/million Btu heat input using 30-day Rolling Average	40 CFR Section 60.44b
Total Particulate Matter: less than or equal to 5.0 lbs/hour	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
Particulate Matter < 10 micron: less than or equal to 5.0 lbs/hour	Title I Condition. To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name Bushmills Ethanol
 Permit Number: 06700061 - 004

Carbon Monoxide: less than or equal to 21.5 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Volatile Organic Compounds: less than or equal to 2.8 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
OPERATING REQUIREMENTS	hdr
Temperature: greater than or equal to 1500 degrees F as a three-hour rolling average at the Combustion Chamber unless a new minimum is set pursuant to Minn. R. 7017.2025 subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average minimum temperature limit is once again achieved. This shall be reported as a deviation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
The Permittee shall operate and maintain the thermal oxidizer any time that any process equipment controlled by the thermal oxidizer is in operation.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Quarterly inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment external system components, including but not limited to the heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. The Permittee shall inspect the control equipment internal components during all planned shutdowns and not less than annually, including, but not limited to, the refractory.	Minn. R. 7007.0800, subp. 4, 5 and 14
Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5 and 14
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 05/24/2006 for PM emissions <i>P.C. 2009</i>	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due before end of each 36 months starting 05/24/2006 for PM10 emissions. <i>2009</i> <i>2012</i>	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due before end of each 60 months starting 05/24/2006 for VOC emissions <i>P.C. 2009</i>	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due before end of each 60 months starting 05/24/2006 for CO emissions <i>P.C. 2009</i>	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
MONITORING REQUIREMENTS	hdr
Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored equipment is required.	Minn. R. 7007.0800, subp. 4
The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three hour rolling average temperatures for the dryer chamber.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300 To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200



TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Daily Monitoring: The Permittee shall physically check the temperature recording device at least once each operating day to verify that it is working and recording properly	Minn. R. 7007.0800 subp. 4 and 5
Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800 subp. 4, 5 and 14
The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 2.5 degrees Celsius. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. R. 7007.0800 subp. 4 and 5
RECORDKEEPING AND REPORTING	hdr
Recordkeeping: Record and maintain records of the amounts of fuel combusted on a monthly basis. These records may consist of purchase records or receipts.	40 CFR Section 60.13(i) and February 20, 1992, EPA memorandum to meet the requirements of 40 CFR Section 60.48c(g) and (i)
Maintain records of the fuel combusted each day and calculate annual capacity factors for each fuel.	40 CFR Section 60.49b(d)
✕ Maintain the following records for each operating day and submit the information to the Agency quarterly: 1. Calendar date. 2. Average hourly nitrogen oxides emission rates expressed as NO ₂ . 3. The 30-day average nitrogen oxides emission rate in lb/mmBtu calculated at the end of each operating day. 4. Identification of the operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the standards in this permit. 5. Identification of the operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken. 6. Identification of the times when emission data have been excluded from the calculation of average emission rates and reasons for excluding the data.	40 CFR Section 60.49b(g) and (h)
The Permittee subject to the nitrogen oxides standard of 40 CFR Section 60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions under the provisions of 40 CFR Section 60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored under 40 CFR Section 60.48b(g)(2) and the records to be maintained under 40 CFR Section 60.49b(j). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. The plan shall: (continued below)	40 CFR Section 60.49b(c)
(continued) 1. Identify the specific operating conditions to be monitored and the relationship between these operating conditions and nitrogen oxides emission rates (i.e., ng/J or lbs/million Btu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (i.e., the ratio of primary air to secondary and/or tertiary air) and the level of excess air (i.e., flue gas oxygen level). 2. Include the data and information that the Permittee used to identify the relationship between nitrogen oxides emission rates and these operating conditions. (continued below)	40 CFR Section 60.49b(c) (continued)
(continued) 3. Identify how these operating conditions, including steam generating unit load, will be monitored under 40 CFR Section 60.48b(g) on an hourly basis by the Permittee during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate, and the type and format of the records of these operating conditions including steam generating unit load, that will be maintained by the permittee under 40 CFR Section 60.49b(j). If the plan is approved, the Permittee shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan.	40 CFR Section 60.49b(c) (continued)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: CE 004 Fermentation Scrubber

Associated Items: EU 019 Fermenter 1

EU 020 Fermenter 2

EU 021 Fermenter 3

EU 022 Beerwell

GP 004 Fermentation Units Venting to Fermentation Scrubber CE 004

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.0014 grains/dry standard cubic foot	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
Volatile Organic Compounds: less than or equal to 10.0 lbs/hour using 3-hour Rolling Average	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
OPERATIONAL REQUIREMENTS	hdr
Pressure Drop: Greater than or equal to 6.0 inches of water column and less than 25.0 inches of water column, or as measured during the most recent stack emissions test that demonstrated compliance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
Scrubber Water Flow Rate: The Permittee shall operate the scrubber with a scrubber water flow rate of 35 gallons per minute (gpm) or more, or as measured during the most recent stack emissions test that demonstrated compliance.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
If the pressure drop or the water flow rate is not equal to or greater than the minimum value specified herein, the Permittee shall take corrective action as soon as possible to achieve the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.
Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and 14
PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 05/25/2006 for VOC emissions	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

Subject Item: FS 001 Truck Traffic

What to do	Why to do it
Fugitive Emissions: Do not cause or permit the transporting of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Do not cause or permit a road or a driveway to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne.	Minn. R. 7011.0150
Abide by Fugitive Dust Control Plan in Appendix IV	Minn. R. 7011.0150

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name Bushmills Ethanol
 Permit Number 06700061 - 004

Subject Item: FS 002 Equipment Leaks

What to do	Why to do it
STANDARDS PUMPS	hdr
<p>Pumps in light liquid service</p> <p>Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided in 40 CFR 60.482-1(c) and paragraphs (d), (e), and (f)</p> <p>Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the seal.</p>	40 CFR 60.482-2
<p>If an instrument reading of 10,000 ppm or greater is measured, a leak is detected</p> <p>If there are indications of liquids dripping from the pump seal, a leak is detected</p> <p>When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9 (Delay of Repair)</p> <p>A first attempt at repair shall be made no later than 5 calendar days after each leak is detected</p>	40 CFR 60.482-2(b) and (c)
STANDARDS COMPRESSORS	hdr
<p>Each compressor shall be equipped with a seal system that includes a barrier fluid system that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-3(h) and (i).</p>	40 CFR 60.482-3(a)
<p>Each compressor seal system shall be:</p> <ul style="list-style-type: none"> - Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure, or - Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or - Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere 	40 CFR 60.482-3(b)
<p>The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.</p> <p>Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.</p>	40 CFR 60.482-3(c) and (d)
<p>Each sensor shall be checked daily or shall be equipped with an audible alarm</p> <p>The Permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.</p>	40 CFR 60.482-3(e)
<p>If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph 40 CFR 60.482-3(e)(2), a leak is detected</p>	40 CFR 60.482-3(f)
<p>When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected except as provided in 40 CFR 60.482-9 (Delay of Repair)</p> <p>A first attempt at repair shall be made no later than 5 calendar days after it is detected, except as provided in 40 CFR 60.482-9</p>	40 CFR 60.482-3(g)
STANDARDS PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE	hdr
<p>Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background as determined by the methods specified in 40 CFR 60.485(c).</p>	40 CFR 60.482-4(a)
<p>After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9 (Delay of Repair)</p>	40 CFR 60.482-4(b)
STANDARDS VALVES	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Bushmills Ethanol

Permit Number: 06700061 - 004

<p>Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1(c).</p> <p>The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.</p>	<p>40 CFR 60.482-6(a)</p>
<p>Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.</p> <p>When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with 40 CFR 60.482-6(a) at all other times.</p>	<p>40 CFR 60.482-6(b) and (c)</p>

TABLE B: SUBMITTALS

B-1 05/03/10

Facility Name: Bushmills Ethanol
Permit Number: 06700061 - 004

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: RECURRENT SUBMITTALS

Facility Name: Bushmillis Ethanol

Permit Number: 06700061 - 004

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Initial Startup of the Monitor	CE001
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 10/01/2004 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 10/01/2004 (for the previous calendar year). To be submitted to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Appendix I:

Insignificant Activities and Applicable Requirements

The table below lists the insignificant activities that are currently at the facility and their associated general applicable requirements.

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
7007.1300, subp. 3(A)	Space heaters fueled by kerosene, natural gas, or propane; a space heater is a heating unit that is not connected to piping or ducting to distribute the heat	Minn. R. 7011.0510/0515
7007.1300, subp. 3(C)	Equipment used for forging, pressing, drawing, spinning, or extruding hot metals	Minn. R. 7011.0710/0715
7007.1300, subp. 3(E)(1)	Gasoline storage tanks with a combined total tankage capacity of not more than 10,000 gallons	Minn. R. 7011.0710/0715
7007.1300, subp. 3(G)	Laboratory emissions	Minn. R. 7011.0510/0515, Minn. R. 7011.0610, Minn. R. 7011.0710/0715
7007.1300, subp. 3(H)(3)	Brazing, soldering, or welding equipment	Minn. R. 7011.0510/0515, Minn. R. 7011.0610, Minn. R. 7011.0710/0715
7007.1300, subp. 3(K)	Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment	Minn. R. 7011.0710/0715

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Appendix II:

Dispersion Modeling Inputs and AERA Chemicals List

APPENDIX MATERIAL
Facility Name: Bushmills Ethanol
Permit Number: 06700061-004

**Appendix III:
Odor Action Plan**

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Odor Action Plan

Bushmills Ethanol
Atwater Plant

February 4, 2004

The Odor Action plan is intended to meet the requirements of Minnesota Pollution Control Agency (MPCA) regarding any potential odors from the Plant. This plan is contingent on the construction and subsequent operation of the proposed facility. The Ethanol Plant is intended to operate continuously (24 hours per day). Any possible exposure to malodorous emissions beyond the property boundaries, considering the intensity, frequency, and duration, will be a function of the prevailing weather conditions such as temperature, wind direction, wind speed, and humidity. These odor characteristics may also be affected by unpredicted and undesirable process upsets. In the event that nuisance odors from the facility are realized during normal operations, the response portion of this plan will be implemented once the odor complaint is validated. This plan describes the response the facility will take if valid odor complaints do occur. The plan also describes the potential odor sources, odor abatement best management practices (BMP) and emission controls in place in order to minimize or negate the possibility of nuisance odors.

I. Possible Sources of Odorous Emissions

The various emission units at the plant and their emission characteristics are described below:

Fermentation Process and Vessels-The fermentation process uses a mixture of corn, yeast, and water to ferment grain alcohol (ethanol). The yeast in the mixture aids in converting corn sugars to ethanol and carbon dioxide. Fermentation is performed in large batch process vessels, called fermenters. Emissions from fermentation that could possibly cause odors are ethanol and a variety of trace volatile organic compounds (VOCs), produced as part of the grain fermentation process. The evolved carbon dioxide (CO₂) can serve as a carrier to the organic compounds. The fermentation process vents to a water scrubber where residual VOC's (including ethanol) are removed from the exhaust for emission and odor control.

Distillation: The distillation process follows fermentation. The purpose of distillation is to remove the ethanol from the fermented beer. Distillation is performed with a series of distillation columns. Further ethanol dewatering occurs with molecular sieves to separate the ethanol from the remaining water. The distillation equipment and several emission units involved in the fermentation and distillation processes vent to a thermal oxidation unit where residual VOC's (including ethanol) and particulate matter are destroyed through oxidation. Emissions that could possibly cause odors are ethanol and a variety of

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

trace VOCs, inherent with the grain fermentation process, vacuum distillation, and molecular sieve dehydration

Dried Distiller Grains and Solubles (DDGS) Dryers-The DDGS dryer system is used in series with a centrifuge and process evaporator to dry the spent grains (also known as DDGS) from the distillation process. The DDGS dryers are natural gas fired rotary drum dryers that use hot air to evaporate the water from the DDGS. Emissions that may cause odors are a variety of VOCs and particulate matter inherent with the grain drying process. The emissions that come from the dryer stack (with an odor of cooking corn), are the major potential odor source at the facility. Emissions from the DDGS dryer system are routed to the thermal oxidation unit for emission and odor control.

Wet Cake (Distillers Grains) - Wet cake is the insoluble biomass remaining after extraction of starch from the corn at the centrifuge. Centrifuging is an enclosed process with any vents being ducted to the thermal oxidizer. The wet cake or spent grain is high moisture DDGS. This wet cake contains associated liquid water, proteins, yeast, oils and other fibrous carbohydrates. The plant will directly loadout the wet cake from the centrifuge to a concrete storage pad for truck loading. The wet cake is not significantly odorous, but it is a fertile medium of bacterial growth if exposed to warm ambient temperatures for an extended period of time. Wet cake is potential feed and is produced for nearby customers. If it is not cleaned up during daily plant clean-up, it has the potential to generate nuisance odor. Good housekeeping has proved to eliminate any possible generation of odors. Typically, wet cake has a shelf life of 72 hours at elevated temperatures, so that wet cake is produced only when a customer desires wet cake delivery.

Storage Tanks and Ethanol loading facilities - Onsite storage tanks are used to store fuel-grade ethanol, 200 proof ethanol, 190 proof ethanol, denaturant (natural gasoline), and 190 proof ethanol. Emissions from these tanks that could possibly cause odors are various VOC's and ethanol. The total emissions from these tanks are estimated to be less than five tons per year. Thus, these emissions are not expected to have odor impacts outside the ethanol facility.

Anhydrous Ammonia- Anhydrous ammonia is used to control the process fluid pH in various portions of the ethanol production process. While ammonia is known to have an offensive odor, this process is actually a closed system. Due to storage in a pressure vessel, there should be no release of this material to the atmosphere under normal operations. The anhydrous ammonia is readily consumed in the process stream.

Other emission sources - All other emission sources identified at the plant have been evaluated as having insignificant odor potential. These include, corn and soybean unloading and DDGS loading, corn milling, DDGS cooling cyclone or conveyor, maintenance activities, warehousing and transport engines, fire control equipment, office and janitorial activities, heating, small fuel storage, water for boilers, and sewer plumbing.

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

II. Odor Abatement Practices and Controls

Potential odor from sources from the plant will be controlled by abatement equipment (e.g., pressurized vessel for anhydrous ammonia, internal floating roof tanks for ethanol storage, leak detection and repair program, etc.) and control equipment (e.g., wet scrubber or thermal oxidizer). The source-specific odor controls planned for the facility are listed below:

Fermentation equipment- The fermentation equipment will be controlled with a high efficiency wet absorption scrubber typically called the CO₂ scrubber. The CO₂ scrubber system capture efficiency will minimize potential offsite odor impacts. The ethanol in equilibrium with the carbon dioxide leaving the fermentation tanks and beer well will be absorbed in the scrubber liquor (water). A computerized control and data recording instrumentation system will provide the following scrubber parameters: fluid level, pressure differential, scrubber water pump on-off status, and the make-up water flow rate, with operator alarms and logical shut downs when abnormal conditions exist. The scrubber will operate as a single pass system without water recycle.

DDGS dryer system and distillation equipment- The odors associated with the dryer system and the distillation equipment will be controlled with a high efficiency thermal oxidation unit. The thermal oxidizer destruction efficiency will negate potential offsite odor impacts. A thermal oxidizer will reduce the odorous emissions to negligible levels. Therefore, no further steps should be necessary to reduce the odor. Also, thermal oxidation is the most effective technology currently available that may be implemented on a DDGS dryer system exhaust.

Storage Tanks- Any potentially odorous VOC emissions from the natural gasoline and product storage tanks will be minimized by internal floating roofs in accordance with Federal New Source Performance Standards (NSPS).

Anhydrous Ammonia- Anhydrous ammonia is stored in a pressurized tank and operates in a closed system. The anhydrous ammonia is fed directly to the process for pH control and is consumed by the process liquid.

Wet Cake (Distillers Grains)- The market or process upset conditions may warrant wet cake productions. Wet cake will be sold and shipped as quickly as possible to avoid the potential for odor impacts near the facility. Wet cake will not typically be stored for more than 72 hours unless the outside temperature is less than 55°F.

Other emissions sources- Other emission sources have been evaluated as having insignificant odor potential. These include: generator, corn unloading and DDGS loading, corn milling, DDGS cooling and storage, maintenance activities, warehousing and transport engines, fire control equipment, office and janitorial activities, heating, small fuel storage, water for boilers, and sewer plumbing.

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

III. Maintenance Schedules for Maintaining Control Equipment Efficiency

Daily operational checks as well as monthly and quarterly maintenance schedules will be performed and recorded based on air operating permit requirements and specific manufacturer specifications. These schedules will occur according to operation and maintenance plans as summarized below. The following items will be maintained for each emission unit:

DDGS Dryer System

- Inventory of replacement parts on site will be maintained.
- A review of the burner control system and the mechanical components of the DDGS dryer system conveyors on a monthly basis.
- Check of fans, conveyors, drive motors, and centrifuges (daily and walk around and record exceptions)
- Record operational status of drive motors, conveyors, and fans daily (DCS).

Wet Scrubber-

- Inventory of replacement parts on site will be maintained.
- Check the circulation pump operation and packing on a monthly basis.
- Check scrubber level, differential pressure, and water flow rate on a daily basis (by DCS).
- Record water pump status, liquid levels, differential pressure, and water flow rate (by DCS).

Wet Cake (Distillers Grains)

- Record wet cake production daily (by sales records)

IV. Equipment Failure and Response Analysis

Upon validation of a malodorous odor complaint, immediate corrective action will be taken to include potential equipment or plant shut down. In the event of a process or odor control equipment breakdown, the facility will comply with state rules, and will use this document as the "compliance document". The following steps will be taken in the event of process or odor control equipment failure:

DDGS Dryer System

If the dryer system is not operating, the minimum operating conditions for this process will be production of wet cake which is limited by livestock feed markets and the following wet cake production conditions

Wet cake (Stillage)

The facility will have the capacity to store 3 days of wet cake production in case of a process upset condition. The minimum operating conditions for storage of this wet cake include

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

- Wet cake will not be stored for longer than 3 days on site, unless the ambient temperature is below 55°F, or
- The facility will sell the wet cake as soon as possible or transport the wet cake offsite for land application or agricultural bagging.
- Distillers wet or a dry grain is a valuable co-product. It would not be economical to produce distillers grains without a market or sale of the product. Spoiled product is not suitable for sale to DDGS customers, so it must be avoided. Spoiled product will be disposed of immediately.

Fermentation Vessels

Failure or malfunction of the CO₂ scrubber-If the scrubber is to fail, fermentation may continue for up to 48 hours for batch completion. However, further fermentation would be suspended immediately until the scrubber becomes operational.

IV. Notification

If the facility does not follow the aforementioned response steps, the State will be notified within 24 hours of a breakdown of more than one hour that resulted in a valid offsite nuisance odor. The plant electronic or written logs will serve as the record of compliance. Such records may include work orders or revised procedures for maintenance or repair of odor abatement operations.

V. Record Keeping and Validation

All complaints received (direct or indirect) will be investigated, and if such complaint is believed to be due to an odor originating from the Ethanol Plant, it will be "validated" by plant personnel. Only valid complaints will be faxed to the State and records maintained of such valid complaints will be kept in a plant file. Records of complaints not validated will also be maintained in the plant file. All odor complaints received, direct or indirect, valid or not valid, will use the attached Odor Complaint Report as documentation of such odor complaint and the necessary follow-up action.

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Bushmills Ethanol Plant		Odor Complaint Report	
To be faxed to MPCA only if "validated." FAX Phone: () -			
Plant Use Only			
Date	Time	Name of Person Taking Report:	
Complaint Information			
Person Making Complaint:			
Telephone Number:			
Address:			
City:	State:	ZIP Code:	
Location Where Odor was detected (Indicate same, if same as above):			
Address:			
City:	State:	Zip Code:	
Odor Description: (Please also sketch where odor was detected in the space below)			
Duration:	Hours:		
Start Time:	<input type="checkbox"/> AM	<input type="checkbox"/> PM	Date:
End Time:	<input type="checkbox"/> AM	<input type="checkbox"/> PM	Date:
Odor Smells Like: <input type="checkbox"/> Alcohol <input type="checkbox"/> Drying/Cooked Corn <input type="checkbox"/> Decaying Organic Matter <input type="checkbox"/> Other			
Odor Classification: <input type="checkbox"/> Weak <input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Normal <input type="checkbox"/> Strong			
Weather Conditions			
Beginning:	Temperature (°F)	Barometric Pressure (in Hg)	Dew Point Temp (°F)
	Precipitation (in)	Wind Speed (mph)	Wind Direction:
Ending:	Temperature (°F)	Barometric Pressure (in Hg)	Dew Point Temp (°F)
	Precipitation (in)	Wind Speed (mph)	Wind Direction:
Plant Information			
Operator Name:		Complaint Information Validated: <input type="checkbox"/>	
Known Operational or Equipment Problems:		<input type="checkbox"/> NO	
		<input type="checkbox"/> YES	
If yes, explain corrective action			
Sketch location where odor was detected below (label "North" direction on sketch):			

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Appendix IV:
Fugitive Dust Control Plan

Fugitive Emission Control Plan

Bushmills Ethanol
Atwater Plant

August 31, 2007

Background of the Bushmills Facility

The Bushmills Ethanol facility (Facility) produces fuel grade ethanol at its facility located on the west side of the city of Atwater (City) in Kandiyohi County, Minnesota. The Facility was constructed in 2005 and began operation on December 31, 2005. The basic steps in ethanol production are preparation of the feedstock, fermentation, distillation, and recovery of the alcohol. Residual corn solids in the form of distiller's dried grains with solubles (DDGS) and wetcake are produced as byproducts which are used as high protein animal feed. Air emission sources from ethanol production include receiving, storing, handling, cleaning and grinding of corn, steam production (boiler), drying, storage, handling and shipping of DDGS and wetcake, fermentation and distillation, storage of ethanol of varying purities at various points in the process, storage of denaturant, and shipping of denatured ethanol. Air emissions are controlled through the use of air pollution control devices including a thermal oxidizer, scrubber, flares and baghouses.

The uncontrolled sources of fugitive dust are wetcake loading, DDGS handling, corn loading, and on-site paved haul roads.

Development of the Fugitive Emission Control Plan

The Facility is permitted by the Minnesota Pollution Control Agency (MPCA) under Air Emission Permit No. 06700061 (Permit). This permit includes the requirement:

"Fugitive Emissions Control Plan. The Permittee shall submit a Fugitive Emissions Control Plan within 60 days of the date of permit issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures and recordkeeping. The Permittee shall follow the actions and recordkeeping specified in the control plan."

This Fugitive Emissions Control Plan has been developed to comply with the Permit requirement, and to ensure that particulate concentrations in the vicinity of the facility are minimized. Since operations began, Bushmills has employed state and federal Best Management Practices' guidelines to minimize dust and potential emissions.

Effective Date of the Fugitive Dust Control Plan

This Fugitive Emissions Control Plan becomes effective following approval by MPCA.

Facility Layout and Dust Emissions Sources

The fugitive dust sources at the facility are shown in Figure 1 and discussed below.

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Wetcake is loaded outside, adjacent to the cooling tower and is exposed directly to precipitation. A roof is being considered for this area to minimize windblown materials. Wetcake is contained through the use of concrete bunkers although some may spill onto the road during transfer. Good housekeeping practices such as sweeping the loading area are used.

Corn is loaded into storage bins. During the loading and unloading process, corn and corn dust may become windblown or spill. Good housekeeping practices such as sweeping are used.

DDGS is stored inside and is pneumatically loaded into trucks/railcars with the exhaust air passing through a baghouse. There is potential for DDGS to become windblown when doors to the storage area are opened. Good housekeeping practices such as sweeping and minimizing time doors are opened during windy conditions are used.

Facility roads have been paved to minimize fugitive dust. However, paved surfaces can generate fugitive dust from vehicle activity that agitates fine particulate material deposited on the paved surface causing the particles to become airborne. Among the sources of dust from paved surfaces at the Facility are

Tracking of mud and dirt from off-site roadways
Spillage of materials on road surfaces, and
Deposition of dust from other sources both on and off-site

The primary mechanism for minimizing fugitive dust emissions from the paved roads is to minimize road surface silt loading by sweeping the roads. This is performed on an as needed basis.

There are no other exposed material storage piles in the Facility and no soil or other loose material is disturbed or handled on site so there are no such sources of fugitive dust at Bushmills.

General description

In this case, BMPs are general practices that are inexpensive, relatively simple, and applicable to a wide variety of industrial activities. These practices shall be employed at the Facility to minimize dust emissions. BMPs address the following general areas:

Employee Training
Good Housekeeping Practices
Preventive Maintenance Program
Routine Inspection Programs
Corrective Action Practices
Record keeping

Training

The employee-training program should be conducted annually or within 1 month of a new hire, to inform personnel responsible for implementing the plan of the components

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

and goals of the Fugitive Emission Control Plan. As appropriate to specific job classifications, the training shall include topics such as the following:

- Bushmills Ethanol company policies including the BMPs
- Reporting and recordkeeping requirements
- Inspection requirements
- Relevant environmental and safety information and plans
- Good housekeeping and management practices for corn, DDGS, and wetcake

Fugitive emission training requirements for non-Bushmills employees who aid in loading or unloading the trucks will be the same as for Bushmills employees. Training is not required if drivers are not involved in material transfer. Training will be performed by the Bushmills trainer and will occur prior to the truck drivers performing material transfer activities.

Training will be documented and retained on file at the Facility.

Preventive Maintenance

Preventive maintenance is important not only for operational reasons but also to provide a degree of environmental protection because equipment malfunctions have the potential to release pollutants to the environment. Preventative maintenance is performed on the Facility's dust control equipment as described in the Facilities Operations and Maintenance Plan.

Inspection Program

The areas where wet cake, corn, and DDGS are stored or loaded/unloaded will be inspected following each day shift M-F and designated personnel will sign-off that materials have been swept.

All outside paved areas will be inspected on a weekly basis in conjunction with the SWPPP Site Inspection. Fugitive emissions or conditions likely to generate fugitive emissions will be noted and corrected. Housekeeping conditions will be recorded on the SWPPP Site Inspection Checklist (Attached). SWPPP inspections are only required during non-frozen conditions. During frozen conditions, paved areas will be inspected monthly. This inspection will also be documented on the SWPPP Site Inspection Checklist.

Corrective Action Practices

If any inspections or routine observations reveal visible emissions, accumulated dust or other dust control problems, a course of action to solve and/or clean up will be developed following the inspection or observation. Depending on the problem, the inspector may recommend follow up actions. If a problem can be corrected immediately utilizing available personnel, the Facility Manager or designee will initiate corrective measures. If the problem cannot be corrected within the shift that the problem was noted, then an appropriate corrective action shall be developed. If the problem results in an emission that the Plant Manager believes may be in violation of an air permit, then the process will be shut down until corrections can be made.

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Record Keeping

All records relating to the Fugitive Emissions Control Plan will be maintained for a period of 3 years. The records will be made available to the Minnesota Pollution Control Agency as requested during inspections. Records will include the following:

- Sign-off sheets verifying the shift inspections
- SWPPP Site Inspection Checklist
- Training records
- Corrective actions taken

Notices

Questions, comments and Notices regarding this Fugitive Emissions Control Plan should be directed in writing to:

Bushmills Ethanol, Inc
17025HWY12 NE
Atwater, MN 56209
Mr. Erik Osmon, General Manager

A copy of this document and all updates will be maintained at the Facility.

L:\work\bushmills_ethanol\89806\tech\Fugitive Emissions Control Plan\Text - Fugitive Emissions.doc

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

Fugitive Emissions Control Plan - Daily Shift Inspection for SWPPP

Areas where Corn, Wet Cake & DDGS are stored or loaded/unloaded must be inspected following each day shift M-F, personnel are to sign-off that all materials have been swept.

Date: _____

Wet Cake Road	
Grains Receiving Building	
Hammermill Area	
Scalping Bin Emptied	
Grain Receiving Basement	

Print Name _____

Fugitive Emissions Control Plan - Daily Shift Inspection for SWPPP

Areas where Corn, Wet Cake & DDGS are stored or loaded/unloaded must be inspected following each day shift M-F, personnel are to sign-off that all materials have been swept.

Date: _____

Wet Cake Road	
Grains Receiving Building	
Hammermill Area	
Scalping Bin Emptied	
Grain Receiving Basement	

Print Name _____

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

ATTACHMENT A

SWPPP SITE INSPECTION CHECKLIST

SWPPP
SITE INSPECTION CHECKLIST
Bushmills Ethanol, Arwater Minnesota
Page 1 of 2

1. After inspecting the exterior facility areas, have you observed any of the following materials or activities exposed to stormwater:

- a) Raw, intermediate, or final products (e.g. salt, sand, gravel, scrap, metal products, vehicle parts, etc.). List products: _____
- b) Industrial waste/byproducts (e.g. DDGS, modified wetcake, corn, uncovered dumpsters, scrap equipment, etc.), list material: _____
- c) Loading, unloading or other handling of industrial waste, byproduct, raw, intermediate or final product, list activity: _____
- d) Vehicle or process equipment maintenance (e.g. fueling, washing, repair, painting, etc.) list type of maintenance: _____
- e) Other significant materials: _____

2. Inspect material transfer areas:

Ethanol Fuel Transfer Areas

Areas Clean? _____ (yes/no/NA)
Any sign of spills/leaks? _____ (yes/no/NA)
Drains clear of debris/ice/snow? _____ (yes/no/NA)
Action Required/Taken: _____

Diesel and Gasoline Fueling Area

Fueling Area Clean? _____ (yes/no/NA)
Any sign of spills/leaks? _____ (yes/no/NA)
Action Required/Taken: _____

Waste Disposal:

Are facility wastes (i.e., trash, filters, transformers, batteries, etc.) properly managed? Containers covered? _____ (yes/no/NA)
Action Required/Taken: _____

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004

SWPPP
SITE INSPECTION CHECKLIST
Bushmills Ethanol, Atwater Minnesota
Page 2 of 2

Corn and Corn Distiller Materials

Are spilled materials cleaned up and properly managed? _____ (yes/no/NA)
Action Required/Taken _____

3. Have any illicit discharges been noted (e.g. floor drains discharging to storm sewer or ditch, and/or process waste water generated and disposed of at the facility without an appropriate NPDES/SDS permit)? Describe: _____

4. If this inspection was conducted while stormwater runoff was leaving the site, indicate if any pollutants were visible in the runoff (oil sheens, sediment or other discoloration). Check all areas where spills have occurred and note the condition of runoff. _____

5. Describe any new significant materials that are exposed to stormwater on the site that were not indicated in the plan: _____

6. Describe any changes to the SWPPP plan that will be necessary as a result of the inspection findings. _____

7. Determine if the nonstructural and structural BMPs as indicated in the SWPPP are installed and functioning properly. Please describe corrective actions needed to repair nonfunctioning BMPs. _____

Date of inspection: _____

Inspector/Title(s): _____

Signature/Date: _____

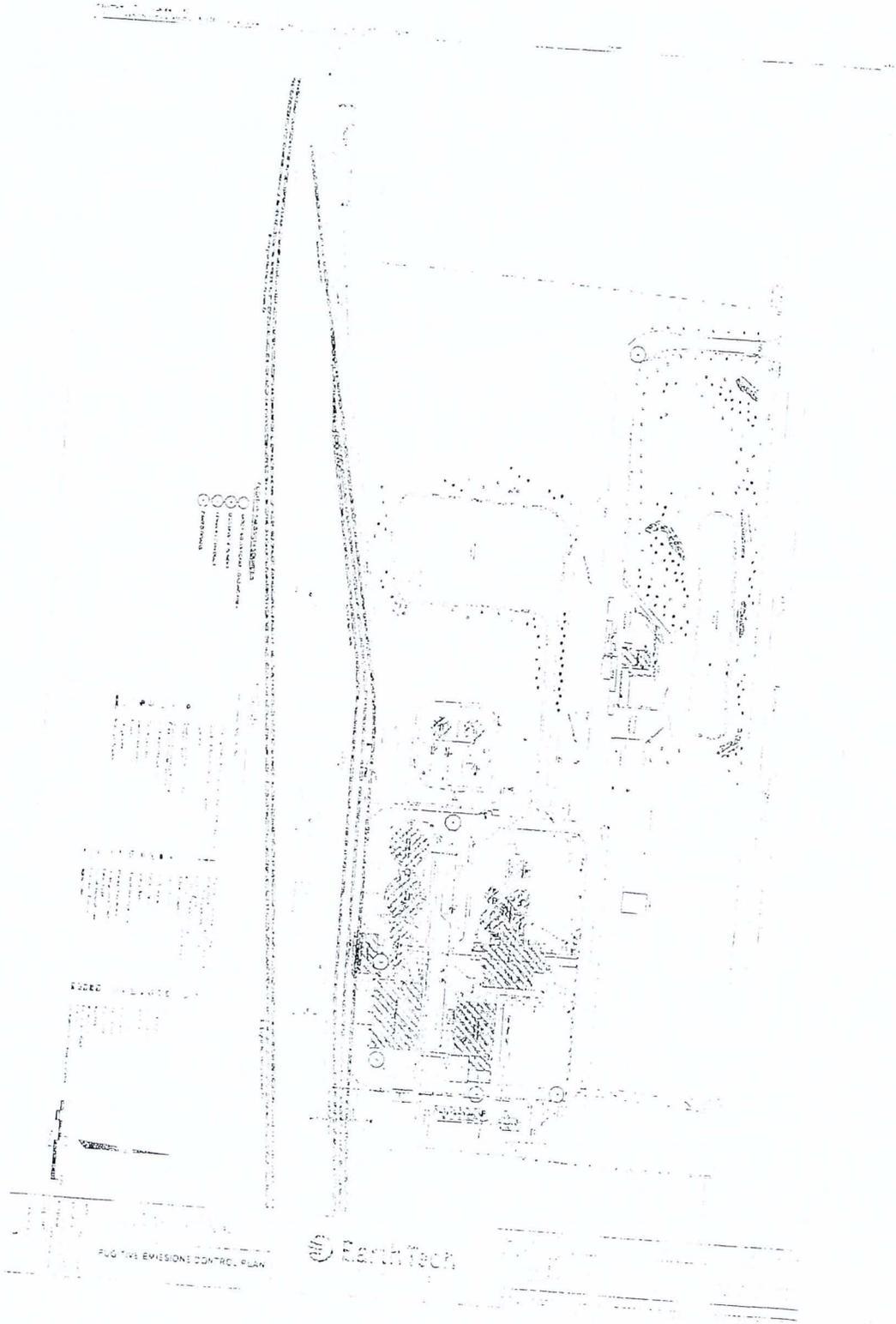
Keep an organized record of the inspections on file as part of plan.

Revise the SWPPP as needed.

APPENDIX MATERIAL

Facility Name: Bushmills Ethanol

Permit Number: 06700061-004



ADDITIONAL EMISSIONS CONTROL PLAN

Earth Tech

TECHNICAL SUPPORT DOCUMENT
For
DRAFT AIR EMISSION PERMIT NO. 06700061-004

This Technical Support Document (TSD) is intended for all parties interested in the draft permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft permit.

1. General Information

1.1 Applicant and Stationary Source Location:

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 2869)
Bushmills Ethanol 17025 Highway 12 Northeast Atwater, Minnesota 56209 Kandiyohi County	Bushmills Ethanol 17025 Highway 12 Northeast Atwater, Minnesota 56209 Kandiyohi County
Contact: Dave Meyers, Pinnacle Engineering, Inc. Phone: (736) 315-4501	

1.2 Facility Description

Bushmills Ethanol (Bushmills) is a fuel-grade ethanol production plant located just west of Atwater, Minnesota at the intersection of U.S. Highway 12 and Minnesota Highway 123. The plant is currently permitted to produce 65 million gallons of denatured ethanol annually. The plant also produces distillers dried grains and solubles (DDGS) and wet cake for animal feed as a co-product of the ethanol production process. Emission sources at the facility include grain handling and processing units, fermentation tanks, boilers, liquid storage tanks, valves and other process equipment, ethanol loadout, and vehicular road traffic. Pollutants of particular concern are typical of the corn-based ethanol manufacturing industry in general and consist primarily of volatile organic compounds (VOCs), particulate matter (PM and PM10), and nitrogen oxides (NOx).

1.3 Description of the Activities Allowed by this Permit Action

This permit action is a major amendment and incorporates changes proposed in three permit applications:

Table 1. Permit Applications Associated with this Amendment

Permit Type	Application Date	Permit Action
Major Amendment	01/18/08	004
Minor Amendment	01/29/09	004
Major Amendment	10/08/09	004

The first group of changes are associated with a major amendment application in which Bushmills proposed modifying required pressure drop operating ranges for three baghouse control devices. This permit application was submitted in response to a letter dated 8/30/07 from MPCA compliance/enforcement staff to Bushmills Ethanol as a follow-up to a compliance inspection. The second group of changes are associated with a minor amendment application in which Bushmills proposed adding additional ethanol truck loadout capacity and replacing an existing loadout flare with another flare. The third group of changes is associated with a major amendment application in which Bushmills proposed adding a second set of molecular sieves to the distillation process for redundancy, removing dryer operating and monitoring requirements for temperature, process throughput, beer feed rate, syrup feed rate, and changing the required operating parameter ranges for baghouse and fermentation scrubber control devices. The only changes to potential-to-emit for the facility are related to the proposed loadout flare replacement.

1.4. Facility Emissions:

Table 2. Title I Emissions Increase Summary

Pollutant	Emissions Increase from the Modification (tpy)	Net Emissions Increase (tpy)	PSD/112(g) Significance Thresholds (tpy)	NSR/ 112(g) Review Required? (Yes/No)
PM	-0.01	-0.01	25	No
PM ₁₀	-0.01	-0.01	15	No
PM _{2.5}	-0.01	-0.01	10	No
NO _x	-1.49	-1.49	40	No
SO ₂	0.00	0.00	40	No
CO	-1.55	-1.55	100	No
Ozone (VOC)	0.00	0.00	40	No
Lead	0.00	0.00	0.6	No

Table 3. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD		X	
Part 70 Permit Program		X	
Part 63 NESHAP			X

2. **Regulatory and/or Statutory Basis**

Environmental Review

Environmental Review applies if there is an increase in ethanol production of 5 million gallons or more, or an increase in source-wide potential-to-emit of 100 tons per year or more. Because the facility is not proposing an increase in allowable ethanol production, an Environmental Assessment Worksheet has not been prepared.

New Source Review

The facility is a synthetic minor for the New Source Review regulatory program. This status is maintained in the permit through ethanol production limits, material throughput limits, and operational requirements.

Part 70 Permit Program

The facility is a synthetic minor for the Part 70 regulatory program. This status is maintained in the permit through ethanol production limits, material throughput limits, and operational requirements.

New Source Performance Standards (NSPS)

The tanks at the Bushmills facility are subject to 40 CFR pt. 60, subp. Kb. The fluid handling equipment is subject to 40 CFR pt 60, subp. VV. The thermal oxidizer is subject to 40 CFR 60, subp. Db.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The Bushmills facility has limited potential Hazardous Air Pollutant (HAP) emissions of less than 10 tons per year of a single HAP, and less than 25 tons total HAPs. Therefore, the facility is not considered a major source of hazardous air pollutants.

Title IV, Acid Rain Program

The facility is not subject to the Acid Rain Program codified in 40 CFR pt. 72. The Acid Rain Program is applicable to electric utilities only.

CAM Applicability

Compliance Assurance Monitoring (CAM) addresses emission sources having major emissions of regulated air pollutants under Title V at major Title V sources. Since the source is not a major Part 70 source, CAM is not applicable. Nevertheless, the permit does require compliance demonstration. Compliance with the annual throughput limits is determined monthly, on a 12-month rolling sum based on recordkeeping. A nitrogen oxides predictive emission monitoring system is required for the thermal oxidizer by 40 CFR 60, Subp. Db.

Air Emissions Risk Assessment (AERA)

The previous permit for this facility (06700061-003) contains requirements that AERA risk be re-calculated if stack parameters are to be changed. Because the proposed new replacement loadout flare has different stack parameters than the previous loadout flare, this requirement was triggered and updated AERA risk numbers were calculated, the result being that no unacceptable human health or environmental risk would potentially result upon implementation of the proposed changes. The re-modeling and re-calculation of AERA risk permit requirements are being left as they are in the existing permit without changing to the tiered approach. A tiered approach to AERA risk re-calculation is currently being developed and should be incorporated into the Bushmills air permit if it is available for use for the next permit action for this facility. The decision to not use the tiered approach for re-modeling is because refined modeling has not been done for this facility.

Table 4. Regulatory Overview of Units Affected by the Modification/Permit Amendment

EU, GP, or SV	Applicable Regulations	Comments
GP 010, EU 065, SV 011	Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J); Minn. R. 7007.0800, subp. 2	New ethanol loadout flare added; old flare removed
FC	Minn. R. ch. 7009; Minn. R. 7011.0150; Minn. R. 7007.0800, subp. 2	Added diesel engine idling minimization plan requirements
GP 005, EU 066, SV 001	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Added second set of molecular sieves (EU 066) to distillation equipment group
GP 006	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Removed dryer temperature, syrup feed rate, beer feed rate, and throughput requirements because not relevant to meeting emission limits
CE 004	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40	Changed fermentation scrubber pressure drop range requirements based on performance testing results and operational observations

	CFR Section 70.2 and Minn. R. 7007.0200	
GP 003	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.0300. To avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200	Changed baghouse pressure drop range requirements based on compliance/enforcement recommendations and performance testing

3. Technical Information

The only potential emissions changes resulting from the activities covered by this permit amendment are related to the proposed new replacement ethanol loadout flare. Because the new flare is of a different, more efficient design, the estimated annual potential emissions from the facility will be less than with the old flare. On the other hand, because the new flare has greater capacity, estimated short-term hourly emissions will be greater than with the old flare. The new flare also will have different stack parameters (lower height, larger diameter, lower exit gas temperature). This triggered the existing permit (Air Emission Permit #06700061-003) requirements for AERA risk recalculation. Even though an EAW and AERA were previously completed for this facility, refined modeling has not been performed. Therefore, MPCA modeling staff used screening methods in lieu of refined modeling analysis, and the submitted data and analysis were approved on 5/4/09. AERA risks associated with the facility after implementing the proposed changes were also evaluated. MPCA staff used the most recent RASS submitted by the company's consultant to confirm that emissions from the new loadout flare are expected to decrease the hazard index and not significantly change cancer risks from what was calculated in the previously completed (2004) AERA and that the overall risks for all pollutants from the facility using conservative risk estimates from similar MN ethanol facility are below risk management thresholds. The modeling (screening) input parameters and AERA RASS table have been added as an appendix to the draft permit.

The remaining changes to the permit are primarily related to the required pressure drop operating ranges for baghouses and fermentation scrubber, as well as various dryer operating and monitoring requirements. The pressure drop operating range requirements were modified in the draft permit based on MPCA compliance/enforcement staff recommendations, as well as performance test results. The dryer operating and monitoring requirements for temperature, beer feed rate, syrup feed rate, and throughput were eliminated in the draft permit because the dryers are process equipment (not control equipment), they are required to vent at all times to a thermal

oxidizer, and the process operating and monitoring requirements (for beer feed rate, syrup feed rate, and throughput) have no potential for impact on facility emissions.

4. Calculations of Potential to Emit

Potential emission estimates for the new replacement ethanol loadout flare are contained in the permit application. The estimated emissions are based on manufacturer (John Zink Company) guarantees and vendor (MRW Technologies, Inc.) calculations. The other proposed changes to the permit (adding new set of molecular sieves, modifying various operating parameters) have no potential emissions increases associated with them.

5. Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the Permittee of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements. There will be no changes to the periodic monitoring requirements contained in the current Bushmills total facility permit, except those related to the dryer process monitoring requirements being removed from the permit.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements.
- Whether add-on controls are necessary to meet the emission limits.
- The variability of emissions over time.
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit.
- The technical and economic feasibility of possible periodic monitoring methods.
- The kind of monitoring found on similar units elsewhere:

Table 5 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 5. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
Total Facility	Production Limits for Title I Condition	Recordkeeping	Production and processing records of ethanol produced, corn processed, and DDGS produced.

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
Dry Bulk Commodity Control Equipment Vents GP002	PM/PM ₁₀ ≤ 0.005 grains dry standard cubic foot.	Performance tests and recordkeeping	This stack vents emissions from several emissions units. Bushmills is required to maintain monthly records of the 12-month rolling sum of corn processed and alcohol produced.
Baghouses: GP003	Title I Condition	Recordkeeping	Read and record the pressure drop of the baghouses and maintain and inspect the control equipment such that they achieve a 99 % overall capture efficiency.
190hp IC Engine: EU060	SO ₂ and Opacity	Recordkeeping: Daily records of hours of operation, Monthly record of 12-month rolling sum of hours of operation.	The draft permit allows the Permittee to operate each generator up to 50 hours / 12-month period. The Permittee is required to maintain monthly records of the 12-month rolling sum of number of hours of operation of each generator.

7. Insignificant Activities

The Bushmills facility's list of insignificant activities is contained in the total facility permit TSD. There will be no additional insignificant activities added as part of this permit amendment. A current list of insignificant activities is contained in an appendix to the draft permit.

8. Permit Organization

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements.

9. Comments Received

Public Notice Period: March 18, 2010 – April 19, 2010

Comments were not received from the public or EPA during the public notice period.

10. Conclusion

Based on the information provided by Bushmills Ethanol, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 06700061-004 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Jim Robin (permit writer/engineer)
Jennifer Lovett (enforcement)
Curt Stock (stack testing)
Jessica Forsberg (peer reviewer)

AQ File No. 4205

